

## Section-A

## (Multiple Choice Questions (MCQ's))

Q.1 Choose the correct answer for each from the given options:

- (i) The center of gravity of body is a point where \_\_\_\_\_ acts.  
 (a) The Torque (b) The external force  
 (c) The weight of the body (d) None of these
- (ii) Which of the following belong to the second kind of lever?  
 (a) Pair of Scissor (b) Pair of forceps  
 (c) Door (d) Arm balance
- (iii) The waves produced by a vibrating body in air are \_\_\_\_\_ waves.  
 (a) Longitudinal (b) Transverse (c) Electromagnetic (d) Magnetic
- (iv) If  $q = 4$  cm and  $dp = 2$  cm, then the magnification of the mirror is:  
 (a) 2 (b) 0.5 (c) 4 (d) None of these
- (v) If the speed of body moving in circle is doubled its centripetal acceleration becomes \_\_\_\_\_.  
 (a) Twice (b) Four times (c) Eight times (d) None of these
- (vi) The energy possessed by a body due to its position is called:  
 (a) Kinetic energy (b) Heat energy  
 (c) Potential energy (d) None of these
- (vii) Elasticity of a substance depends on its:  
 (a) Temperature (b) Size (c) Nature (d) None of these
- (viii) The temperature of substance changes from  $-20^{\circ}\text{C}$  to  $20^{\circ}\text{C}$ . What is the temperature change in kelvin's scale.  
 (a) 100K (b) 40K (c) 293K (d) None of these
- (ix) The materials in which electric current can flow easily due to their low resistance are called \_\_\_\_\_.  
 (a) Insulators (b) Semiconductors  
 (c) Conductors (d) None of these
- (x) Dr Abdus Salam was awarded Nobel Prize for his work on \_\_\_\_\_.  
 (a) Electronics (b) Radiation  
 (c) Grand unification theory (d) Gravitation
- (xi) One meter is equal to \_\_\_\_\_.  
 (a)  $10^4$  mm (b)  $10^3$  mm (c)  $10^2$  mm (d)  $10^6$  mm
- (xii) \_\_\_\_\_ is a scalar quantity.  
 (a) Torque (b) Distance  
 (c) Momentum (d) Acceleration
- (xiii) The unit of coefficient of friction is \_\_\_\_\_.  
 (a) Newton (b) Kilogram (c) Meter (d) None
- (xiv) When a ray of light enters obliquely from rarer into denser medium, then an angle of refraction is \_\_\_\_\_ angle of incidence.  
 (a) Greater than (b) Smaller than (c) Equal to (d) unrelated to
- (xv) According to Huygen's waves theory, light propagates in the shape of \_\_\_\_\_.  
 (a) Photons (b) Waves (c) Particles (d) None of these
- (xvi) The value of constant that occurs in Coulomb's force formula is \_\_\_\_\_  $\text{Nm}^2 / \text{C}^2$ .  
 (a)  $9 \times 10^{-9}$  (b)  $9.0 \times 10^{-16}$  (c)  $9.0 \times 10^9$  (d)  $9.9 \times 10^{-9}$
- (xvii) A galvanometer can be converted into an ammeter by connecting a wire of low resistance \_\_\_\_\_ with the galvanometer.  
 (a) In series (b) In parallel  
 (c) In a combined way (d) In no way

## Section-B

## (Short Answer)

**Note:** Answer any EIGHT of the following questions. Each question carries 05 marks.

- Q.2 What is Physics? Name a few branches of Physics.
- Q.3 What are fundamental and derived units?
- Q.4 A body starting from rest acquires a velocity of 10 m/s in 5 seconds. Calculate the distance covered by the body in 5 seconds.
- Q.5 How can a vector be represented in magnitude and direction both?
- Q.6 Define centre of gravity. How would you locate the centre of gravity of an irregular piece of a metal sheet?
- Q.7 What is centripetal force? Give examples of a body moving in a circular path.
- Q.8 A box is pushed 5 m across a level surface by a horizontal force of 200 N. How much work is done on the box?
- Q.9 What is an inclined plane and how does it help in doing work?
- Q.10 What is atmospheric pressure? How will you measure it?
- Q.11 A car of mass 1000 kg travelling at 72 km/h uniformly brought to rest over a distance of 40 m. Find the average acceleration.
- Q.12 How is a rainbow formed?
- Q.13 What do you understand by a capacitor and its capacitance. Define its unit.

## Section-C

## (Descriptive Answer)

**Note:** Answer any TWO of the following questions. Each question carries 14 marks.

- Q.14(a) State and explain Hooke's law. Describe an experiment to verify Hooke's law.  
 (b) Differentiate between heat and temperature.
- Q.15(a) Explain the formation of an image by a plane mirror.  
 (b) An object is placed at a distance of 30 cm from a concave mirror of focal length 5 cm. If the object is 5 cm high, find the position and size of the image.
- Q.16 (a) Explain the Right Hand Rule for the magnetic force.  
 (b) Explain the working of an Electric Bell.